Amendments to the Specification

Please replace the paragraph beginning at line 10 of page 2 with the following.

As discussed above, the sensor flange 3 is projected laterally from the flange side 1a of the movable rail 1 and the magnetic sensor 4 is mounted on the support member 5 extending laterally from the stationary rail 2. Therefore, when any products, articles or goods of metal accidentally enter a space between the seat and the vehicle floor, there is a possibility that the magnetic sensor 4 will be interfered by such metal products and work improperly. Further, when any longitudinal products, articles or goods, such as umbrellas, accidentally enter the space between the seat and the vehicle floor, there is a possibility that the sensor flange 3 and/or the magnetic sensor 4 will be deformed and/or damaged by such longitudinal products. Furthermore, since the sensor flange 3 and the magnetic sensor 4 are exposed to the outside, dirt and/or dust ~~are is easy to~~ may easily adhere onto the sensor flange 3 and the magnetic sensor 4. If dirt and/or dust ~~adhere~~ adheres onto the sensor flange 3 and/or the magnetic sensor 4, there is a possibility that the sensing performance of the magnetic sensor will be decreased.

Please replace the paragraph beginning at line 23 of page 2 with the following.

The position sensor system disclosed in U.S. Patent No. 5,967,549 includes a magnetic actuator, and a device that is responsive to a magnetic field created by the magnetic actuator. The magnetic actuator is operatively coupled to a guide track affixed to a floor of a vehicle. The devise that is responsive to the magnetic field created by the magnetic actuator is attached to a support rail attached to a seat. In the position sensor system, any construction for protecting the magnetic actuator and the magnetic field-responding device from any products, articles or goods that may accidentally enter a space between the seat and the vehicle floor is not devised. Therefore, when any products, articles or goods of metal accidentally enter the space between the seat and vehicle floor, there is a possibility that the device that is responsive to the magnetic field will be interfered with by such products of metal and work improperly. Further, when any longitudinal products, articles or goods, such as umbrellas, accidentally enter the space between the seat and the vehicle floor, there is a possibility that the magnetic actuator and/or the device that is responsive to the magnetic field will be deformed and/or damaged by such longitudinal products.

Furthermore, dirt and/or dust ~~are is easy to~~ may easily adhere onto the magnetic actuator and the device that is responsive to the magnetic field. If dirt and/or dust ~~adhere~~ adheres onto the magnetic actuator and/or the device that is responsive to the magnetic field, there is a possibility that the magnetic sensitivity of the device will be decreased.

Please replace the paragraph beginning at line 3 of page 6 with the following.

The magnet may comprise a ~~strip-like~~ strip-shaped magnet. The ~~strip-like~~ strip-shaped magnet may have chamfered upper edge portions extending along a longitudinal direction thereof and sloping downward. The magnet may be mounted to the predetermined portion of the one of the upper rail member and lower rail member through an iron plate serving as a yoke.

Please replace the paragraph beginning at line 8 of page 6 with the following.

The one of the upper rail member and lower rail member may have a ~~flame~~ frame portion provided at the predetermined portion thereof. The magnet may be received in and supported by the frame portion. The frame portion may be formed by causing the predetermined portion of the one of the upper rail member and lower rail member to be protruded inwardly.

Please replace the paragraph beginning at line 21 of page 6 with the following.

The magnet may be housed in and positioned by a case that is mounted to the predetermined portion of the one of the upper rail member and lower rail member. The case may comprise a ~~frame-like~~ frame-shaped case. The case may comprise a body of a substantially quadrangular, truncated pyramid shape in outline.

Please replace the paragraph beginning at line 21 of page 10 with the following.

The magnet may comprise a ~~strip-like~~ strip-shaped magnet. The ~~strip-like~~ strip-shaped magnet may have chamfered upper edge portions extending along a longitudinal direction thereof and sloping downward. The magnet may be mounted to the predetermined portion of the one of the upper rail member and lower rail member through an iron plate serving as a yoke.

Please replace the paragraph beginning at the first line of page 11 with the following.

The one of the upper rail member and lower rail member may have a ~~flame~~ frame portion provided at the predetermined portion thereof. The magnet is received in and supported by the frame portion. The frame portion may be formed by causing the predetermined portion of the one of the upper rail member and lower rail member to be protruded inwardly.

Please replace the paragraph beginning at line 14 of page 11 with the following.

The magnet may be housed in and positioned by a case that is mounted to the predetermined portion of the one of the upper rail member and lower rail member. The case may comprise a ~~frame-like~~ frame-shaped case. The case may comprise a body of a substantially quadrangular, truncated pyramid shape in outline.

Please replace the BRIEF DESCRIPTION OF THE DRAWINGS with the following.

These and other objects and many of the attendant advantages of the present invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, in which like reference numerals denote the same parts throughout the Figures and wherein:

Fig. 1 is a schematic view of a typical vehicle seat provided with a position sensor system;

Fig. 2 is a schematic perspective view of assistance in explaining a conventional position sensor system;

Fig. 3 is a schematic partially sectional view of the conventional position sensor system shown in Fig. 2;

Fig. 4 is a schematic exploded perspective view of assistance in explaining a position sensor system according to a first embodiment of the present invention;

Fig. 5 is a schematic front view of a position sensor unit employed in the position sensor system of Fig. 4;

Fig. 6 is a schematic sectional view of the position sensor system of Fig. 4;

Fig. 7 is a schematic view of assistance in explaining a modification of a magnetic shielding plate employed in the position sensor system of Fig. 4;

Fig. 8 is a schematic exploded perspective view of assistance in explaining a position sensor system according to a second embodiment of the present invention;

Fig. 9 is a schematic sectional view of the position sensor system shown in Fig. 8;

Fig. 10 is a schematic exploded perspective view of assistance in explaining a position sensor system according to a third embodiment of the present invention;

Fig. 11 is a schematic sectional view of the position sensor system shown in Fig. 10;

Fig. 12 is a schematic exploded perspective view of assistance in explaining a modification of a construction for mounting a magnetic sensor of Figs. 10 and 11 to a top plate section of an upper rail member shown in Figs. 10 and 11;

Fig. 13 is a schematic sectional view of a modification of a magnet shown in Figs. 10-12;

Fig. 14 is a schematic sectional view of the magnet of Figs. 10-12, in which the magnet is mounted on a bottom plate of a lower rail member through an iron plate serving as a yoke;

Figs. 15-29 are each a schematic view of assistance in explaining a construction for mounting the magnet of Figs. 10-12 on the bottom plate section of the lower rail member;

Fig. 30 is a schematic exploded perspective view of assistance in explaining a modification of a construction of Fig. 12 for mounting the magnetic sensor to the top plate section of the upper rail member;

Fig. 31 is a schematic partially sectional view of the modification shown in Fig. 30;

Fig. 32 is a schematic exploded perspective view of assistance in explaining another modification of the construction of Fig. 12 for mounting the magnetic sensor to the top plate section of the upper rail member;

Fig. 33 is a schematic partially sectional view of the modification shown in Fig. 32;

Fig. 34 is a schematic exploded perspective view of a position sensor system according to a fourth embodiment of the present invention;

Fig. 35 is a schematic sectional view of the position sensor system of Fig. 34;

Fig. 36 is a schematic exploded perspective view of a position sensor system according to a fifth embodiment of the present invention;

Fig. 37 is a schematic sectional view of a construction for mounting of a magnet holder employed in the position sensor system of Fig. 36;

Fig. 38 is a schematic exploded perspective view of assistance in explaining the construction shown in Fig. 37;

Figs. 39-41 are each a schematic view of assistance in explaining a modification of the construction shown in Figs. 37 and 38;

Fig. 42 is a schematic perspective view of the magnet holder, the magnet and a ~~frame-like~~ frame-shaped hold-down plate, in which the magnet is adapted to be pressed into a first recess of the magnet holder by means of the hold-down plate;

Fig. 43 is a schematic perspective view of assistance in explaining a position sensor system according to a sixth embodiment of the present invention; and

Fig. 44 is a schematic sectional view of the position sensor system shown in Fig. 43.

Please replace the paragraph beginning at line 20 of page 18 with the following.

Referring again to Fig. 4 and referring to Fig. 5, the position sensor unit 22 comprises a housing 24 of a substantially inverted U-shape in cross-section which has spaced apart leg portions 24a, 24b and a top plate section 24c interconnecting the spaced apart leg portions 24a, 24b, a magnetic actuator 25 creating a magnetic field, e.g., a magnetic piece or electromagnet, the magnetic actuator 25 being provided in one 24a of the leg portions, and an element 26 which is responsive to the magnetic field created by the magnetic actuator 25, the magnetic field-responding element 26 including, for example, a Hall element or Hall integrated circuit and being provided in the other 24b of the leg portions so as to be opposed to or aligned with the magnetic actuator 25. The top plate section ~~24b~~ 24c of the housing 24 is provided with a positioning projection 27 protruding upward therefrom, and holes 28, 29.

Please replace the paragraph beginning at line 16 of page 27 with the following.

The position sensor system 40 according to the third embodiment of the present invention comprises a magnetic sensor 42 electrically connected to the controller through a signal cable (not shown) and mounted to the approximately middle portion of the longitudinal direction of the top plate section 12b of the upper rail member 12, and a ~~strip-like~~ strip-shaped magnet 50 bonded onto a region of the bottom plate section 14b of the lower rail member 14 which is more rear than the approximately middle portion of the longitudinal direction of the bottom plate section 14b of the lower rail member 14. The magnetic sensor 42 includes an armor case 44, a Hall element or a Hall integrated circuit (not shown) housed within the armor case 44, a positioning projection 27 projecting upward from an upper surface of the armor case 44 and holes 28, 29 formed in the upper surface of the armor case 44. Like the position sensor unit 22 according to the first embodiment of the present invention, the magnetic sensor 42 is mounted to the top plate section 12b of the upper rail member 12 by causing the positioning projection 27 to be fitted in the positioning hole 15 of the upper rail member 12 and causing fastening bolts (not shown) to be screwed through the holes 16, 17 of the upper rail member 12 and screwed into the holes 28, 29 of the armor case 44.

Please replace the paragraph beginning at line 7 of page 28 with the following.

In the third embodiment of the present invention, when the magnetic sensor 42 is withdrawn from the ~~strip-like~~ strip-shaped magnet 50, the magnetic sensor 42 generates a first electric signal representative of the seat being in the forward position, and transmits the first signal to the controller. When the magnetic sensor 42 is operatively opposed to the magnet 50 and responds to a magnetic field created by the magnet 50, the magnetic sensor 42 generates a second electric signal representative of the seat being in the rearward position, and transmits the second signal to the controller. The controller controls the passenger restraint device so as to cause the deployment of the passenger restraint device to be expedited, according to the first electric signal, and controls the passenger restraint device so as to cause the deployment of the passenger restraint device to be delayed, according to the second electric signal.

Please replace the paragraph beginning at line 4 of page 30 with the following.

Referring to Fig. 13, the ~~strip-like~~ strip-shaped magnet piece 50 may have

chamfered upper edge portions 50a extending along a longitudinal direction of the magnet piece 50 and sloping downward. Such a construction allows the magnet piece 50 to be prevented from being damaged by any foreign substances that may accidentally enter the lower rail member 14 from the forward and/or rearward direction of the lower rail member 14, because the magnet piece 50 does not have longitudinal corner edges and the foreign substances will not be stopped against the magnet piece 50 and will be slipped along the chamfered upper edge portions 50a.

Please replace the paragraph beginning at line 5 of page 31 with the following.

Referring to Fig. 18, there is illustrated a second modification of the construction (shown in Figs. 15 and 16) for mounting the magnet piece 50 to the bottom plate section 14b of the lower rail member 14. In the modification, the bottom plate section 14b of the lower rail member 14 is provided with a pair of spaced apart rising pieces 14g extending along the longitudinal direction of the bottom plate section 14b. The rising pieces 14g are formed by causing portions of the bottom plate section ~~14e~~ 14b to be cut and causing the portions to obliquely rise up inwardly. The magnet piece 50 is interposed between the rising pieces 14g and retained by the rising pieces 14g.

Please replace the paragraph beginning at line 13 of page 31 with the following.

Referring to Figs. 19 and 20, there is illustrated a third modification of the construction (shown in Figs. 15 and 16) for mounting the magnet piece 50 to the bottom plate section 14b of the lower rail member 14. In this modification, a substantially rectangular ~~frame-like~~ frame-shaped case 55 for housing the magnet piece 50, which is formed independently from the lower rail member 14, is employed. The case 55 is made of material selected from the group consisting of iron, aluminum, copper, stainless steel, and resin. The case 55 has an opening 55' and a pair of spaced apart mounting pieces 55a ~~provided at and~~ projecting from front and rear sides thereof. The case 55 is mounted on the bottom plate section 14b of the lower rail member 14 by causing the mounting pieces 55a to be secured to the bottom plate section 14b. The magnet piece 50 is housed within the case 55 and exposed to the outside through the opening 55'.

Please replace the paragraph beginning at line 6 of page 32 with the following.

In a case where the case 55 is formed of material selected from the group consisting of iron, aluminum, copper and stainless steel, the case 55 may have ~~tube-like~~ tube-shaped retaining rings 55c provided at the mounting pieces 55a as shown in Fig. 22. In connection with this, the bottom plate section 14b of the lower rail member 14 has a pair of spaced apart through-holes 14h. The case 55 is mounted on the bottom plate section 14b of the lower rail member 14 by causing the ~~tube-like~~ tube-shaped retaining rings 55c to be inserted through the through-holes 14h and causing ends of the ~~tube-like~~ tube-shaped retaining rings 55c to be riveted over the outer surface of the bottom plate section 14b.

Please replace the paragraph beginning at line 25 of page 33 with the following.

Referring to Figs. 30 and 31, there is illustrated a modification of the construction (shown in Fig. 12) for mounting the magnetic sensor 42 with respect to the top plate section 12b of the upper rail member 12. In Figs. 30 and 31, components that are substantially similar to those of the example shown in Fig. 12 are denoted by the same reference numerals. The description of them will not be repeated hereinafter. In this modification, the armor case 44 of the magnetic sensor 42 has a pair of spaced apart spring clips 44c provided at both sides of the armor case 44 and extending downwardly from the flange portion 44b, each of the spring clips 44c being of a substantially U-shape. The spring clips 44c have step portions 44c' provided at free ends thereof. The step portions 44c' are formed by causing the free ends of the spring clips 44c to be cut out. The magnetic sensor 42 is mounted to the top plate section 12b of the upper rail member 12 with the armor case 44 being fitted through the opening 13 of the upper rail member 12, with the step portions 44c' of the spring clips 44c being engaged with an edge of the opening 13, and with the flange portion ~~40b~~ 44b being pressed down against the top plate section 12b of the upper rail member 12 due to actions of the spring clips 44c.

Please replace the paragraph beginning at line 7 of page 35 with the following.

The cleaner means 70 comprises a body 71 of a substantially inverted symbol-of-ohm shape, and ~~leaner~~ cleaner piles 72. The body 71 comprises a substantially U-

shape central section 71a and an inverted L-shape portion 71b extending from each of both sides of the U-shape central section 71a. The cleaner piles 72 are studded over an outer surface of a bottom portion of the U-shape central section 71a. The cleaning means 70 is mounted to an inner surface of the top plate section 12b with the cleaner piles 72 facing downwardly, and is arranged behind the magnetic sensor 42 which is mounted to the top plate section 12b. As the seat is moved along ~~to~~ the lower rail members 14 and the cleaning means 70 approaches the magnet 50, the magnet 50 can be cleaned by the cleaner piles 72.

Please replace the paragraph beginning at line 2 of page 38 with the following.

Referring to Fig. 41, the second recess portion 94 of the second recess 92 of the holder 90 comprises a pair of inwardly projecting portions 94a spaced apart from and opposed to each other, and a circular portion 94b having a diameter slightly larger than that of the lead screw 81. In this instance, the mounting of the holder 90 with respect to the horizontal section 85b of the bracket plate 85 is carried out by causing the engaging piece 85b" of the bracket plate 85 to be inserted in the slit 90d of the holder 90, and causing the end portion of the lead screw 81 to be press-fitted into the circular portion 94b through a space ~~94e~~ between the spaced apart projecting portions 94a while causing the nut 86 on the end portion of the lead screw 81 to be received in the first recess portion 93. In a condition where the holder 90 is mounted with respect to the bracket plate 85, the end of portion of the lead screw 81 that is received in the circular portion 94b of the holder 90 is stably supported by the pair of the projecting portions 94a.

Please replace the paragraph beginning at line 14 of page 38 with the following.

Referring to Fig. 42, the magnet 50 received in the first recess 90a may be pressed into the first recess 90a by a ~~frame-like~~ frame-shaped hold-down plate 98. The ~~frame-like~~ frame-shaped hold-down plate 98 has a pair of spaced apart snap leg portion 98a hanging from the hold-down plate 98. The snap leg portions 98a are provided with engaging pawls 98a' which are formed by causing regions of the snap leg portions 98a to be cut and causing the regions of the snap leg portions 98a to be raised relative to surfaces of the snap leg portions 98a. In connection with this, the holder 90 is provided

with a pair of third spaced apart recesses 99 with which the snap leg portions 98a of the hold-down plate 98 are engaged. The third recesses 99 of the holder 90 are provided with engaging grooves 99a (only one groove 99a is shown in Fig. 42) with which the engaging pawls 98a' of the hold-down plate 98 are engaged. The magnet 50 received in the first recess 90a of the holder 90 is pressed into the first recess 90a of the holder 90 by causing the snap leg portions 98a' to be engaged with the third recesses 99, and causing the engaging pawls 98a' to be engaged with the grooves 99a of the holder 90.